

ABSTRACT

A power system having a phase locked loop (PLL) with a notch filter for synchronous reference frame sequence separation. The notch filter includes a generalized integrator tuned to the notch frequency. The output of the generalized integrator is summed with the filter input
5 signal and the output of the summer is fed back to the integrator input. In one embodiment, the notch filter is programmable by a control signal generated in response to the filter output signal, thereby causing the filter to self-regulate to a frequency related to the PLL input signal.

Illustrative power systems include active VAR generators and active rectifiers. One or more additional notch filters may be used to remove harmonic components from derived synchronous
10 reference frame sequence components.